

(modified PTO-1449)

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**LIST OF REFERENCES CITED BY APPLICANT**  
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Application Number: 10/734,104  
Confirmation No.: 1655  
Filing Date: December 11, 2003  
First Named Inventor: Martin KAMP  
Group Art Unit: 2828  
Examiner Name:

Sheet 1 of 5 Attorney Docket No.: Nanoplus-2

**U.S. PATENT APPLICATION DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Application Number	Kind code <sup>2</sup>	Name of Applicant of Cited Application	Date of Filing of Cited Application MM-DD-YYYY	US Class/ Sub Class	Pages, Columns, Lines where relevant Passages or Figures appear
W	AA.	6,665,325		Beck et al	12-16-2003	372/46	—
	AB.	6,560,259		Hwang	05-06-2003	372/45	—
	AC.	6,400,744		Capasso et al	06-04-2002	372/96	—
	AD.	6,137,817		Baillargeon et al	10-24-2000	372/45	—
	AE.	5,978,397		Capasso et al	11-02-1999	372/45	—
	AF.	5,936,989		Capasso et al	08-10-1999	372/45	—
	AG.	5,509,025		Capasso et al	04-16-1996	372/45	—
W	AH.	5,457,709		Capasso et al	10-10-1995	372/45	—

**U.S. PUBLISHED PATENT APPLICATION DOCUMENT**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Application Number	Kind code <sup>2</sup>	Name of Applicant of Cited Application	Date of Filing of Cited Application MM-DD-YYYY	US Class/ Sub Class	Pages, Columns, Lines where relevant Passages or Figures appear
W	AI.	2004/0013145		Faist et al	01-22-2004	372/45	—

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Office <sup>3</sup> Number <sup>4</sup>	Kind Code <sup>2</sup>	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Figures Appear	T <sup>6</sup>
W	AJ.	EP 1 133 035			09-12-2001	—	
W	AK.	EP 0 877 454			11-11-1998	—	

Examiner  
Signature

James Vannucci

Date  
Considered

11-14-05

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1 Unique citation designation number. 2 See attached kinds of U.S. Patent Documents. 3 Enter Office that Issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the Indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16, if possible. 6 Applicant is to place a check mark here if English language translation is attached.

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OTHER REFERENCES - NON-PATENT LITERATURE DOCUMENTS				
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JV	AL.	Aellen et al, "Continuous-Wave Distributed-Feedback Quantum-Cascade Lasers on a Peltier Cooler", <u>Applied Physics Letters</u> , (© 2003 American Institute of Physics) vol. 83, no. 10, September 8, 2003, pp. 1929-1931.		
	AM.	Anders et al, "Room-Temperature Emission of GaAs/AlGaAs Superlattice Quantum-Cascade Lasers at 12.6 $\mu\text{m}$ ", <u>Applied Physics Letters</u> , (© 2002 American Institute of Physics) vol. 80, no. 11, March 18, 2002, pp. 1864-1866.		
	AN.	Anders et al, "Room Temperature Lasing of Electrically Pumped Quantum Cascade Micro-cylinders", <u>Physica E</u> (2003), (© 2002 Elsevier Science B.V.) vol. 17, pp. 626-628.		
	AO.	Beck et al, "Continuous Wave Operation of Quantum Cascade Lasers", <u>Journal of Crystal Growth</u> 251 (2003) (© 2002 Elsevier Science B.V.) pp. 697-700.		
	AP.	Capasso et al, "Quantum Cascade Lasers: Ultrahigh-Speed Operation, Optical Wireless Communication, Narrow Linewidth, and Far-Infrared Emission", <u>IEEE Journal of Quantum Electronics</u> (© 2002 IEEE) vol. 38, no. 6, June 2002, pp. 511-532.		
	AQ.	Coldren et al, "Continuously-Tunable Single-Frequency Semiconductor Lasers", <u>IEEE Journal of Quantum Electronics</u> (© 1987 IEEE) vol. QE-23, no. 6, June 1987, pp. 903-908.		
	AR.	Colombelli et al, "Quantum Cascade Surface-Emitting Photonic Crystal Laser", <u>Science</u> , vol. 302, November 21, 2003, pp. 1374-1377.		
	AS.	Delorme, "Widely Tunable 1.55- $\mu\text{m}$ Lasers for Wavelength-Division-Multiplexed Optical Fiber Communications", <u>IEEE Journal of Quantum Electronics</u> (© 1998 IEEE) vol. 34, no. 9, September 1998, pp. 1706-1716.		
	AT.	Faist et al, "Bound-to-Continuum and Two-Phonon Resonance Quantum-Cascade Lasers for High Duty Cycle, High-Temperature Operation", <u>IEEE Journal of Quantum Electronics</u> (© 2002 IEEE) vol. 38, no. 6, June 2002, pp. 533-546.		
	AU.	Faist et al, "Distributed Feedback Quantum Cascade Lasers" <u>Applied Physics Letters</u> (© 1997 American Institute of Physics) vol. 70, no. 20, May 19, 1997, pp. 2670-2672.		
	AV.	Faist et al, "Quantum Cascade Laser" <u>Science</u> , vol. 264, April 22, 1994, pp. 553-556.		
	AW.	Gauggel et al, "Wide-Range Tunability of GaInP-AlGaInP DFB Lasers with Superstructure Gratings", <u>IEEE Photonics Technology Letters</u> (© 1997 IEEE) vol. 9, no. 1, January 1997, pp. 14-16.		

Examiner Signature	<i>James Vannucci</i>	Date Considered	11-14-05
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Jr	AX.	Gmachl et al, "Quantum Cascade Lasers with a Heterogeneous Cascade: Two-Wavelength Operation" <u>Applied Physics Letters</u> (© 2001 American Institute of Physics) vol. 79, no. 5, July 30, 2001, pp. 572-574.	
	AY.	Gmachl et al, "Single-Mode, Tunable Distributed-Feedback and Multiple-Wavelength Quantum Cascade Lasers" <u>IEEE Journal of Quantum Electronics</u> (© 2002 IEEE) vol. 38, no. 6, June 2002, pp. 569-581.	
	AZ.	Gmachl et al, "Temperature Dependence and Single-Mode Tuning Behavior of Second-Harmonic Generation in Quantum Cascade Lasers", <u>Applied Physics Letters</u> (© 2004 American Institute of Physics) vol. 84, no. 15, April 12, 2004, pp. 2751-2753.	
	BA.	Hofling et al, "Edge-Emitting GaInAs-AlGaAs Microlasers" <u>IEEE Photonics Technology Letters</u> (© 1999 IEEE) vol. 11, no. 8, August 1999, pp. 943-945.	
	BB.	Hofling et al, "GaAs/AlGaAs Quantum Cascade Micro Lasers Based on Monolithic Semiconductor-Air Bragg Mirrors" <u>Electronics Letters</u> , vol. 40, no. 2, January 22, 2004.	
	BC.	Hofstetter et al, "High-Temperature Operation of Distributed Feedback Quantum-Cascade Lasers at 5.3 $\mu\text{m}$ " <u>Applied Physics Letters</u> (© 2001 American Institute of Physics) vol. 78, no. 4, January 22, 2001, pp. 396-398.	
	BD.	Hong et al, "Cascaded Strongly Gain-Coupled (SGC) DFB Lasers with 15-nm Continuous-Wavelength Tuning", <u>IEEE Photonics Technology Letters</u> (© 1999 IEEE) vol. 11, no. 10, October 1999, pp. 1214-1216.	
	BE.	Hvozdar et al, "Quantum Cascade Lasers with monolithic Air-Semiconductor Bragg Reflectors", <u>Applied Physics Letters</u> (© 2000 American Institute of Physics) vol. 77, no. 9, August 28, 2000, pp. 1241-1243.	
	BF.	Ishii et al, "Quasicontinuous Wavelength Tuning in Super-Structure-Grating (SSG) DBR Lasers" <u>IEEE Journal of Quantum Electronics</u> (© 1996 IEEE) vol. 32, no. 3, March 1996, pp. 433-441.	
	BG.	Jayaraman et al, "Theory, Design, and Performance of Extended Tuning Range Semiconductor Lasers with Sampled Gratings" <u>IEEE Journal of Quantum Electronics</u> (© 1993 IEEE) vol. 29, no. 6, June 1993, pp. 1824-1834.	
✓	BH.	Kazarinov et al, "Possibility of the Amplification of Electromagnetic Waves in a Semiconductor with a Superlattice", <u>Soviet Physics - Semiconductors</u> , vol. 5, no. 4, October 1971, pp. 707-709.	

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Jr	BI.	Kohler et al, "Single-Mode Tunable, Pulsed, and Continuous Wave Quantum-Cascade Distributed Feedback Lasers at $\lambda \approx 4.6-4.7 \mu\text{m}$ ", <u>Applied Physics Letters</u> (© 2000 American Institute of Physics) vol. 76, no. 9, February 28, 2000, pp. 1092-1094.	
	BJ.	Kohler, "Single-Mode Tunable Quantum Cascade Lasers in the Spectral Range of the CO <sub>2</sub> Laser at $\lambda = 9.5-10.5 \mu\text{m}$ ", <u>IEEE Photonics Technology Letters</u> (© 2000 IEEE) vol. 12, no. 5, May 2000, pp. 474-476.	
	BK.	Kuznetsov, "Theory of Wavelength Tuning in Two-Segment Distributed Feedback Lasers" <u>IEEE Journal of Quantum Electronics</u> (© 1988 IEEE) vol. 24, no. 9, September 1988, pp. 1837-1844.	
	BL.	Mason et al, "Ridge Waveguide Sampled Grating DBR Lasers with 22-nm Quasi-Continuous Tuning Range", <u>IEEE Photonics Technology Letters</u> (© 1998 IEEE) vol. 10, no. 9, September 1998, pp. 1211-1213.	
	BM.	Muller et al, "Electrically Tunable, Room-Temperature Quantum-Cascade Lasers", <u>Applied Physics Letters</u> (© 1999 American Institute of Physics) vol. 75, no. 11, September 13, 1999, pp. 1509-1511.	
	BN.	Muller et al, "Wide-Range-Tunable Laterally Coupled Distributed Feedback Lasers Based on InGaAsP-InP", <u>Applied Physics Letters</u> (© 2001 American Institute of Physics) vol. 79, no. 17, October 22, 2001, pp. 2684-2686.	
	BO.	Page et al, "300 K Operation of a GaAs-Based Quantum-Cascade Laser at $\lambda \approx 9 \mu\text{m}$ ", <u>Applied Physics Letters</u> (© 2001 American Institute of Physics) vol. 78, no. 22, May 28, 2001, pp. 3529-3531.	
	BP.	Page et al, "High Reflectivity Metallic Mirror Coatings for Mid-Infrared ( $\lambda \approx 9 \mu\text{m}$ ) Unipolar Semiconductor Lasers", <u>Semiconductor Science and Technology</u> (© 2002 IOP Publishing Ltd) vol. 17, pp. 1312-1316.	
	BQ.	Page et al, "Optimised Device Processing for Continuous-Wave Operation in GaAs-Based Quantum Cascade Lasers", <u>Electronics Letters</u> , vol. 39, no. 14, July 10, 2003.	
	BR.	Pflugl et al, "High-Temperature Performance of GaAs-Based Bound-to-Continuum Quantum-Cascade Lasers", <u>Applied Physics Letters</u> (© 2003 American Institute of Physics) vol. 83, no. 23, December 8, 2003, pp. 4698-4700.	
	BS.	Rochat et al, "Long-Wavelength ( $\lambda \approx 16 \mu\text{m}$ ), Room-Temperature, Single-Frequency Quantum-Cascade Lasers Based on a Bound-to-Continuum Transition" <u>Applied Physics Letters</u> (© 2001 American Institute of Physics) vol. 79, no. 26, December 24, 2001, pp. 4271-4273.	

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